REPORT NO. 253
APRIL 6, 1962

COMMUNICABLE DISEASE CENTER

POLIOMYELITIS

SURVEILLANCE

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U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE

PREFACE

Summarized in this report is information received from State Health Departments, university investigators, virology laboratories and other pertinent sources, domestic and foreign. Much of the information is preliminary. It is intended primarily for the use of those with responsibility for disease control activities. Anyone desiring to quote this report should contact the original investigator for confirmation and interpretation.

Contributions to the Surveillance Report are most welcome. Please address to: Chief, Poliomyelitis Surveillance Unit, Communicable Disease Center, Atlanta 22, Georgia.

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SUMMARY

Poliomyelitis has continued at low winter levels with only 7 cases reported during the past two weeks.

"The Recommendations of the Public Health Service" for the use of poliomyelitis vaccines for the 1962 poliomyelitis season is presented in Section 2 of this issue.

A report of cases with onset in 1962 is included as well as a summary report of 1961 under-30-day cases.

The foreign report section includes reports from the Phillipines and Argentina.

1. CURRENT MORBIDITY TRENDS

Seven cases of poliomyelitis, 6 paralytic, were reported during the two week period ending March 31 (See Table 1). This number included two case reports from Indiana and two from Texas, each of the four occurring in different counties.

Comparative incidence in recent years is shown in Figure 1. The cumulative total of 76 cases, including 49 paralytic, is well below the totals reported for previous years as shown below.

Twenty States have reported 1962 cases to date.

Polio (Cumulated Weekly) Through 13th Week for Past Five Years

	1962	1961	1960	1959	1958
Paralytic	49	60	154	211	121
Total	76	103	216	296	216

2. 1962 PUBLIC HEALTH SERVICE VACCINE RECOMMENDATIONS

RECOMMENDATIONS OF THE PUBLIC HEALTH SERVICE FOR THE USE OF POLIOMYELITIS VACCINES FOR THE 1962 POLIOMYELITIS SEASON

"With the licensing of Type III oral poliomyelitis vaccine, the United States takes another major step toward the final conquest of paralytic poliomyelitis. Now two effective weapons, the formaldehyde-inactivated vaccine and the oral vaccine, are available for general use. Their proper application should accelerate the decline in poliomyelitis and could lead to the early elimination of the disease.

"An Advisory Committee on the Control of Poliomyelitis was formed in the fall of 1960 for the purpose of reviewing all phases of poliomyelitis prevention. This Committee has been active since then and has prepared recommendations concerning the best use of all available weapons to control the disease.

"Increased interest in the use of poliovaccines is anticipated. Since the supplies of both the formaldehyde-inactivated and the oral vaccines may be limited at this time, the present statement and recommendations should be considered as an interim document applicable to the 1962 poliomyelitis season.

"A. Formaldehyde-Inactivated Vaccine. This vaccine was licensed in 1955. Since then it has been used extensively in this country and in many parts of the world. In all areas where its use has been widespread, great reductions in incidence of paralytic poliomyelitis have been observed. In the United States, where over four hundred million doses have been administered, the decline in paralytic poliomyelitis has exceeded 90 per cent. However, the vaccine has been used to varying extents in different population groups. Over 65 per cent of preschool children and about 70 percent of young adults, particularly males, have not received the recommended series of four injections. Outbreaks, and even some severe epidemics, still occur. These have been confined largely to the unimmunized or incompletely innoculated groups, but sporadic cases of the paralytic form of the disease have continued to be reported among individuals who have had three and even four doses of the vaccine. Its widespread use continues to be recommended.

"B. Oral Vaccines. Research by many workers in this country and overseas during the past decade has brought this vaccine to a point where its widespread use can also be recommended in the United States. Live oral vaccines for Type I and Type II were licensed in the United States in August and October 1961, respectively. Type III is now also available. These vaccines have been used in a number of field trials and community immunization programs in the United States. Methods of administration,

dosage levels and factors influencing response have been determined. Effectiveness as measured by antibody response has been established. In a number of other countries oral vaccines have been used extensively, particularly where formaldehyde-inactivated vaccines have had no or only limited use. No vaccine can be expected to be 100% effective; therefore, one might anticipate that among persons vaccinated with the oral vaccine occasional cases may occur despite the vaccination. The bulk of the reports on its use have been favorable. Immediate and marked reductions in the incidence of the paralytic form of the disease have occurred.

"C. Relative Advantages of the Two Vaccines. The formaldehyde-inactivated vaccine presents a number of advantages that have been observed in over seven years of successful use. Its effectiveness is established. It can be combined with diphtheria, tetanus and pertussis antigens as part of routine pediatric or well-baby clinic practice. For those who have received a partial series of immunizations, a single injection calls forth a prompt antibody response to all three types of poliomyelitis. There is considerable evidence from several epidemic studies that immunization with this vaccine has induced some degree of herd immunity, although it is known that well immunized persons can become intestinal carriers of both wild and attenuated strains.

"One disadvantage of the formaldehyde-inactivated vaccine is the necessity for its being injected. The cost of, and resistance to, an injection procedure may reduce acceptance by some population groups. The use of this vaccine is more difficult in mass campaigns than is the use of the oral vaccine. Furthermore, multiple doses are needed to induce an effective immunity in previously unimmunized persons.

"The oral vaccines also present a number of advantages. The ease of administration, for example a few drops on a lump of sugar or in a teaspoon of syrup, simplifies mass administration. The recommended dosage schedule is amenable to incorporation into routine pediatric practice. A single dose induces a prompt antibody response to the specific type administered although a full sequence of doses is needed for effective immunity against all three types of polio. This vaccine confers a substantial degree of resistance in the alimentary tract to reinfection with wild polio-viruses. Thus, herd immunity is a clear benefit of the use of this vaccine although the duration of this herd immunity has not been determined. These properties are, therefore, of special value for organized community-wide immunization programs designed to raise general immunity to the highest possible levels, to reach those segments of the population that have failed to be vaccinated, and to stop epidemics.

"Advantages of the oral vaccine for epidemic use are the promptness of the antibody response to the specific type administered, and the fact that alimentary tract infection with the vaccine strain temporarily interferes with the possible spread of wild polioviruses.

"The disadvantages of the oral vaccine include the problem of preservation of the commercial product and the possible seasonal variation in its effectiveness. At the present time the oral vaccines must be stored in the frozen state. After thawing and dilution for use, the presently recommended shelf life is only one week. The disadvantage is slight in community-wide programs, but more significant for general office or clinic practice. Enteric viruses may interfere with the effectiveness of the oral vaccine. Since these are more widely prevalent in the summer months, organized community-wide immunization programs using oral vaccine are best undertaken during the late fall, winter and spring months of the year, except in the face of a threatened epidemic.

"During the poliomyelitis season of 1962 emphasis must be placed on vaccination of the unimmunized and inadequately protected with one or the other of these effective vaccines (or a combination so long as there is at least a complete series of either) and also to the initiation of as many well-organized community-wide programs as the supply of vaccines will permit. Individual physicians and health officers will decide which of the two vaccines to use on the basis of their own appraisal of the special factors of their own practice or the circumstances within their own health jurisdictions. Availability of the vaccines may be a determining factor.

"D. Priorities for Use. During the coming months when supplies of both oral and inactivated vaccines may be limited, the following priorities for use of the poliovaccines are recommended:

1. Use in Epidemic Control (described under F)

2. Infants. All communities should organize programs of polio immunization directed to the goal of completing the recommended immunization schedule for all infants by the time they reach their first birthday. Dosage schedules for the use of either vaccine are outlined in following sections.

3. Preschool Children. Effective programs should be organized to reach all preschool children not yet fully immunized. Completion of the schedule of formaldehyde-inactivated vaccine or initiation of a full course of the oral vaccines may be chosen.

4. Other unimmunized Groups. Older population groups, particularly young adults and parents of small children, should continue to be encouraged to receive immunizations.

"E. Organized Community use of Polio Vaccines. Many communities may wish to undertake organized programs to raise the level of poliomyelitis immunity to a maximum with the goal of completely eliminating paralytic poliomyelitis from the community. The choice of vaccines rests with the health officials of the community and the individual physician.

"States and local communities in recent years have been provided with recommendations and guidance for the conduct of programs using the inactivated vaccine. Now with the availability of three types of oral vaccine it is possible to provide similar guidance for community programs using this vaccine.

"The following guidelines are applicable to community programs using either vaccine:

1. Organizers of community drives must be assured that adequate supplies are available before such programs are undertaken.

2. In the interests of time and administrative efficiency, all persons in those groups selected by the community should receive vaccine regardless of past polio immunization history.

3. In general, vaccination programs using either vaccine must have careful planning and achieve a maximum of support from official and voluntary health and medical groups. The active support of the organized medical professions is essential. Civic organizations--Parent Teachers Association, Association of Retail Druggists, National Foundation, Sister Kenny Foundation, various luncheon clubs, Federation of Women's Clubs, the communications media, and others--can offer material help.

4. The plans should assure the ready availability of the vaccine in all areas of the community and for all persons within the selected target groups. Special emphasis must be directed to those areas and population groups having the lowest levels of immunization. Community-wide programs should achieve the immunization of the maximum number of persons, but no less than 80 percent of the pre-school children in all socioeconomic groups.

5. A continuing program of immunization of infants should be incorporated as an essential feature of all organized community-wide programs. Unless a high proportion of infants is immunized during the first year of life, the benefit of a mass program will be short-lived. A continuing program of immunization of infants should be initiated as soon as possible in all communities and should continue indefinitely without regard to season. It can be started prior to and independently of mass community-wide programs.

"The following guidelines are, in general, based upon the February '62 recommendations of Subcommittee One of the Advisory Committee on Poliomyelitis Control dealing specifically with the use of the oral vaccine:

1. It is recommended that the three types of oral vaccines be administered sequentially, each in monovalent form at intervals of about six weeks. Special efforts will be necessary to maintain a high level of community interest and public response to obtain the necessary coverage.

2. Optimally, large scale immunization campaigns with oral poliovirus vaccines should be conducted during the winter or spring months. This consideration, however, should not preclude initiation of such programs in communities that have been unable to obtain sufficient vaccine sooner.

"F. Epidemic Use. Whenever epidemic poliomyelitis threatens an area, immediate mass use of type specific monovalent oral poliovaccine should be initiated. Adequate constant local surveillance and careful epidemiological appraisal must determine the extent of the epidemic threat and the population exposed. A limited reserve of oral poliovaccine for studies in epidemic use is maintained by the Communicable Disease Center. Allocations from this reserve may be made on request of State health officers upon presentation of evidence of the occurrence of at least three cases of poliomyelitis within one month, two caused by the same virus type. The community organization for adequate administration of the vaccine and the maintenance of effective surveillance must be assured.

"G. Dosage Schedules. The following basic dosage schedules are recommended:

1. Formaldehyde-Inactivated Vaccine. Immunization should be initiated in infants between six weeks and three months of age according to the following schedule:

Number of Doses	Intervals from Previous Dose
First	---
Second	6 weeks
Third	6 weeks
Fourth	6 months or longer

"The same schedule may be used for other age groups in the interest of achieving higher levels of immunity before the 1962 poliomyelitis season.

"After the recommended four doses have been administered, additional doses (boosters) are specifically indicated for special reasons, such as the threat of an epidemic or travel to a hyper-endemic area.

2. Oral Vaccine (monovalent).

(a) Infants: Immunization should be initiated between six weeks and three months of age and subsequent doses given according to the following schedule:

Number of Doses	Type	Intervals from Previous Dose
First	I	---
Second	III	6 weeks
Third	II	6 weeks
Fourth	I, II, & III	6 months or longer

(b) All Others (including community use)

Number of Doses	Type	Intervals from Previous Dose
First	I	----
Second	III	6 weeks
Third	II	6 weeks

For organized community use during the poliomyelitis season of 1962, the availability of vaccine may necessitate changes in the above sequence of types. The interval between doses may be as short as 4 weeks if vaccination is begun in the spring or summer, or longer than six weeks if necessitated by shortage of specific type of vaccine or other delays."

/s/ Luther L. Terry

Surgeon General
Public Health Service
U.S. Department of Health,
Education, and Welfare

March 28, 1962

3. 1962 POLIOMYELITIS REPORTED TO PSU

Of the 76 cases of poliomyelitis reported thus far in 1962, 44 had onset since January 1. Thirty-two cases represent delayed reports with onset of illness in 1961.

The map on page 9 depicts by county of origin the 29 cases of paralytic poliomyelitis with onset in 1962 (reported through March 24, 1962). The 29 cases are from 25 counties with Maricopa (Arizona), Santa Clara (California), Jeff Davis (Louisiana) and Hidalgo (Texas) Counties having two cases.

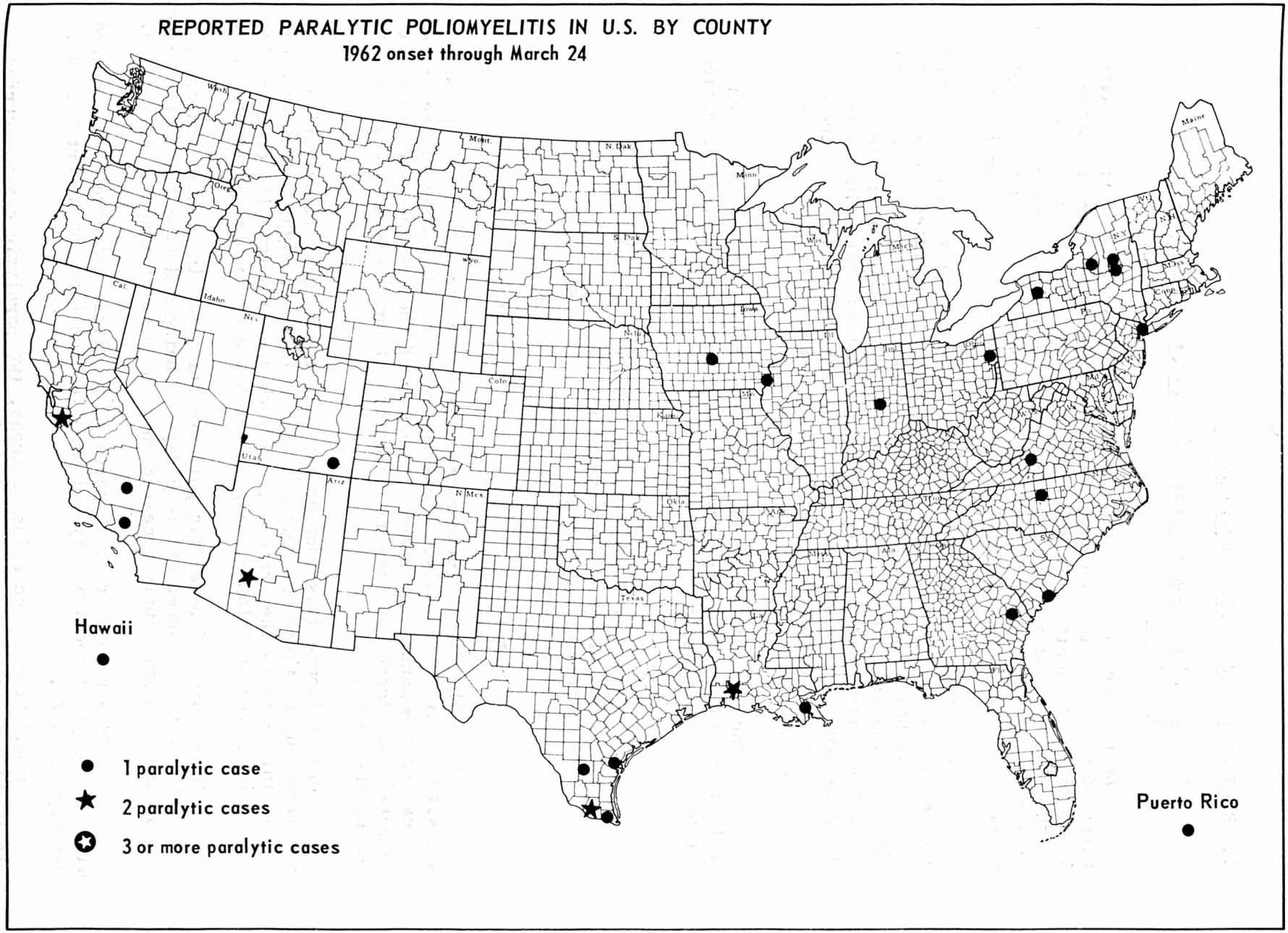
The Maricopa County cases were described in PSU Report No. 252 (March 23, 1962). The patients were 3 and 4 year old siblings with onset of disease in February. Stool specimens from both patients yielded Type I poliovirus.

The 2 paralytic cases in Jeff Davis County, Louisiana, were unvaccinated preschool children with onset in January. Type I poliovirus has been isolated from one of the two cases. The Hidalgo County cases in Texas were also unvaccinated preschool children with onset in January. No isolations of poliovirus have been reported from either Hidalgo County or Santa Clara County, California.

A summary of poliovirus isolates from the 1962 cases is shown below:

County of Origin	Onset	Isolation
Maricopa Co., Arizona	February 17	Type I
Maricopa Co., Arizona	February 17	Type I
Jeff Davis Co., Louisiana	January 14	Type I
Wyoming Co., New York	January 2	Type I
Montgomery Co., New York	January 20	Type I
Mahoning Co., Ohio	February 23	Type III
San Juan, Co., Utah	January 4	Type I

None of the 6 cases with an isolation of Type I poliovirus had received more than one dose of inactivated vaccine. The Ohio case (Type III) had received 3 doses of inactivated vaccine and Type I and Type II oral vaccine (See PSU Report 252).


REPORTED PARALYTIC POLIOMYELITIS IN U.S. BY COUNTY
1962 onset through March 24
Hawaii
1 paralytic case
2 paralytic cases
3 or more paralytic cases
Puerto Rico

4. ROUTINE POLIOMYELITIS SURVEILLANCE

A. Cases With Onset Within 30 Days of Vaccination During 1961 - Final Report

Ever since May 1955, all cases of poliomyelitis occurring within thirty days of vaccination have been promptly investigated by State and local health authorities to determine the manufacturer and lot number of the vaccine used and to seek any correlation between vaccine site and site of first paralysis. These data are promptly reported to the Poliomyelitis Surveillance Unit at the Communicable Disease Center in Atlanta.

During 1961, there were 40 cases of poliomyelitis which occurred during this 30-day interval from inoculation (inactivated vaccine) to onset of illness. This represents only 3 percent of the 1356 cases submitted on individual case forms. New York accounted for one-third of the total "under 30-day cases" reported. In this State, intensive immunization programs were carried out during the epidemic in the Syracuse area. In such a situation, an increased number of cases with recent immunization is to be expected.

Of the 40 cases reported, 29 were classified as paralytic on preliminary forms. The breakdown of the 40 cases following correction for 60-day follow-up is as follows:

Paralytic Poliomyelitis	25
Nonparalytic Poliomyelitis	8
Aseptic Meningitis	5
Not Poliomyelitis	2
Total	40

Two of the 25 paralytic cases were correlated as to vaccine site and site of first paralysis. These two cases resided in widely separated States and the manufacturer and lot number of the vaccine used could not be obtained. There has been no indication of any break in vaccine safety during the year 1961.

Oral poliomyelitis vaccine was utilized in mass immunization campaigns during three epidemic situations in 1961. Type I oral vaccine was administered in the Syracuse, New York area and type III oral vaccine was administered in Atlanta, Georgia and Newberry County, South Carolina.

Three cases of paralytic poliomyelitis, two in Atlanta and one in Newberry County, occurred within 6 days of being fed type III oral vaccine. All 3 cases had previously received only one dose of inactivated vaccine.

In the Syracuse area, 16 cases of paralytic poliomyelitis occurred within 30 days of receiving type I oral vaccine (See PSU Report No. 249, January 5, 1962).

In addition to the epidemic areas, two paralytic cases occurred within 30 days following vaccination with type I oral vaccine in Chautauqua County, New York. This county underwent an oral vaccine program in early December.

B. Vaccine Distribution

A summary of current and cumulative shipments of poliomyelitis and multiple antigen vaccine through February 1962, is presented in Table II at the end of this report.

A total of 4.8 million doses of inactivated vaccine were released during the month of February. During this month, 4.0 million doses were shipped for domestic use and another 0.6 million doses for export. There were 5.7 million doses (5.2 million cc's) unshipped at the end of the month.

With the licensure of Type III oral poliovaccine for the Chas. Pfizer Company, the licensure of types I, II, and III for the Lederle Company and types I and II for the Wyeth Company, it is expected that greater use will be made of this means of vaccination by the medical profession. Accurate estimates of current supply are not available at the moment. However, plentiful supplies are anticipated.

5. ORAL POLIOMYELITIS VACCINE PROGRAMS

Organized community programs for the use of oral vaccine have been in progress in a number of communities during the past several weeks. Feedings with types II and III oral poliovaccine are following the initial feedings with type I carried out earlier in the year in programs in Arizona, Maine, Nevada, New York, Ohio and Oregon.

Newberry County, South Carolina and Atlanta, Georgia completed their immunizations with type II oral vaccine in March. The vaccine was supplied from the epidemic reserve of the United States Public Health Service to complete the immunization series started with the use of type III vaccine during epidemic situations in 1961.

The second feeding of trivalent oral vaccine in the community program in Tampa has been taking place during the current week ending April 7. The serologic results using this method of vaccination are not available as yet.

6. FOREIGN REPORTS

A. The Philippines

Since January 20, 1962, a total of 35 cases of poliomyelitis have been reported from a nursery with a population of 240 children under six years of age. Twenty-one of the 35 cases are stated to be paralytic while the rest are febrile cases under observation. There have been 4 deaths.

The majority of cases have been under two years of age and the two most recent cases reported had onset on February 15 and 16.

Laboratory examination performed by the Bureau of Research and Laboratories has resulted in the isolation of type I poliovirus in 7 of 13 specimens examined.

In addition, an increase in poliomyelitis incidence in Manila and surrounding areas has been observed since the week ending January 27, 1962. The number of admissions at the San Lazaro Hospital remains considerably higher than last year but a definite declining trend has been observed since the peak week ending February 10. The cases have come from Manila and suburbs, Rizal, Cavite, Laguna and Zambales.

(The above information has been abstracted from the Disease Intelligence Center Bulletin, Department of Health, Manila; J.J. Dizon, M.D., M.P.H., Chief, Disease Intelligence Center).

B. Argentina

The province of Mendoza, 660 miles west of Buenos Aires, has experienced an increase in poliomyelitis with 98 cases reported from October 1, 1961 through February 10, 1962. This province is separated by the Andes Mountains from adjacent Santiago Province, Chile, scene of a severe outbreak in late 1961 (See PSU Reports 248, 249 and 250). Thirty of the 98 cases have had respiratory involvement (30.6 percent) and there have been 7 deaths (7.1 percent). The current incidence in comparison to recent years is shown below by month of report:

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	TOTAL
1961-62	0	1	0	7	19	35	32	5*					
1960-61	0	0	0	3	2	3	6	6	6	7	3	3	39
1959-60	1	0	0	2	1	1	0	1	2	1	2	4	15
1958-59	1	2	0	1	0	2	6	4	7	7	5	0	35
1957-58	0	0	0	2	2	3	3	1	0	0	1	0	12

*Through February 10th.

The last major epidemic to occur in Mendoza was during 1956, when a total of 203 cases, including 17 deaths, were reported. Eighty-five percent of the 203 cases were under five years of age.

The same infantile age pattern is seen this year with 90 percent of the cases under five years of age. Two-thirds of the cases have occurred in 3 of the 18 departments in the province. The 7 departments with at least 4 cases are shown below:

Department	Cases	Rate/100,000
Guaymallen	33	30.0
Las Heras	20	31.0
Godoy Cruz	14	16.0
Lujan	5	12.9
San Martin	5	8.8
Ciudad	5	4.5
Maipu	8	6.8
Others	12	--
TOTAL	98	10.9*

*Estimated

Since the middle of November, 273,074 doses of Salk vaccine have been administered with greatest emphasis on the children under 5 years of age.

(The above information is from a report released by Dr. Adolfo Semorile, Minister of Health, Mendoza Minister of Health, and forwarded by Dr. Alberto Ciccarelli, Institute of Microbiology, School of Medicine, Mendoza).

Figure 1

CURRENT U.S. POLIO INCIDENCE
COMPARED WITH YEARS 1957, 1959, and 1961

DATA PROVIDED BY NATIONAL OFFICE OF VITAL STATISTICS
AND COMMUNICABLE DISEASE CENTER

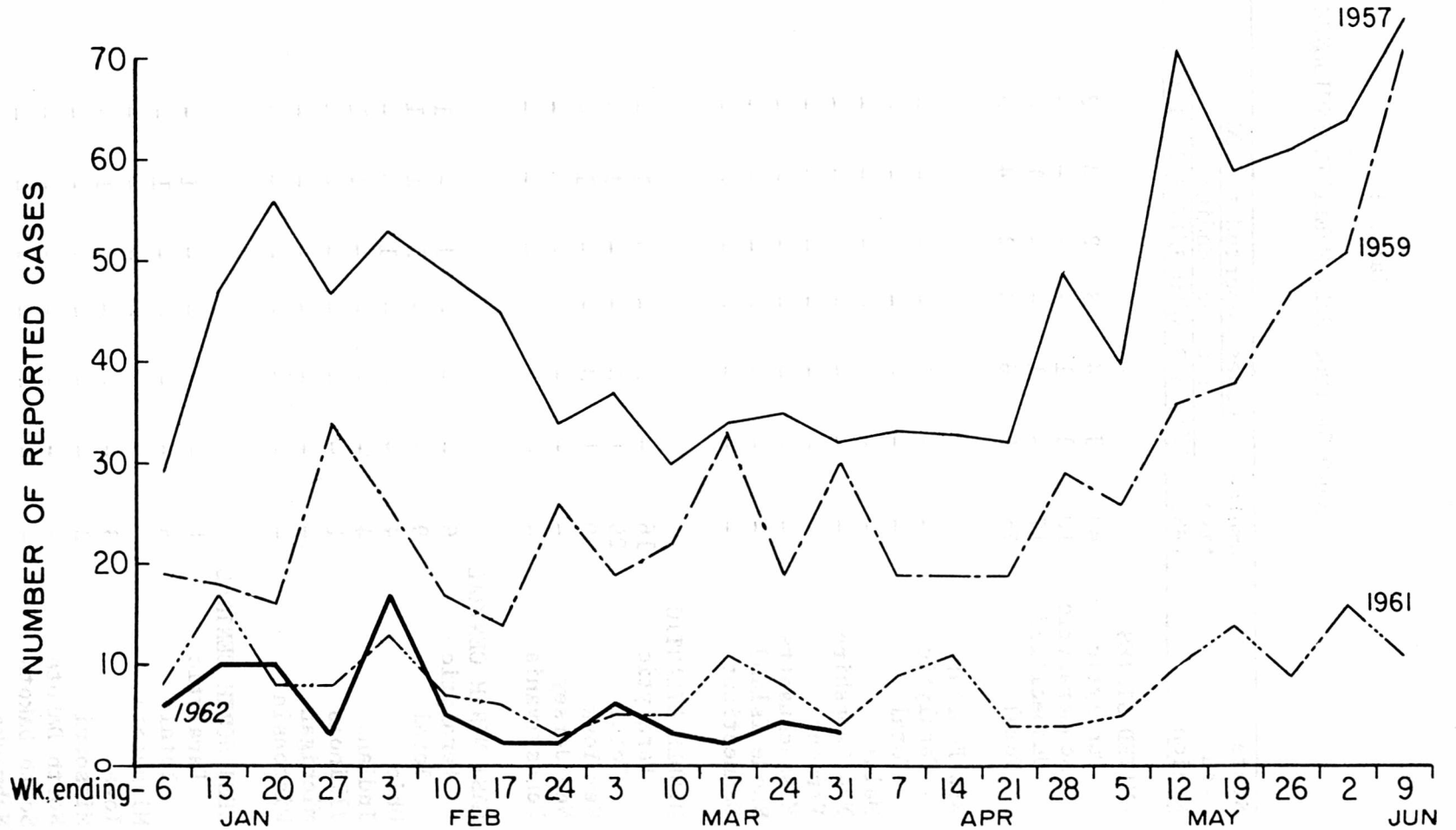


Table 1

TREND OF 1962 POLIOMYELITIS INCIDENCE

State and Region	Cumulative 1962	Cases Reported to CDC For Week Ending 2/24	3/3	3/10	3/17	3/24	3/31	Six Week Total	Comparable Six Weeks Totals in: 1961	1960	1959
UNITED STATES											
Paralytic	49	1	4	3	2	3	3	16	24	53	106
Nonparalytic	10	1	1	-	-	-	-	2	11	13	28
Unspecified	17	-	1	-	-	1	-	2	1	7	15
Total	76	2	6	3	2	4	3	20	36	73	149
NEW ENGLAND											
Paralytic	-	-	-	-	-	-	-	-	2	1	2
Total	-	-	-	-	-	-	-	-	2	1	2
Maine	-	-	-	-	-	-	-	-	-	1	-
New Hampshire	-	-	-	-	-	-	-	-	-	-	-
Vermont	-	-	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	-	-	-	-	-	2	-	1
Rhode Island	-	-	-	-	-	-	-	-	-	-	-
Connecticut	-	-	-	-	-	-	-	-	-	-	1
MIDDLE ATLANTIC											
Paralytic	16	-	2	-	-	1	-	3	3	3	4
Total	29	1	3	-	-	1	-	5	3	5	7
New York	29	1	3	-	-	1	-	5	1	3	7
New Jersey	-	-	-	-	-	-	-	-	1	1	-
Pennsylvania	-	-	-	-	-	-	-	-	1	1	-
EAST NORTH CENTRAL											
Paralytic	6	-	-	-	1	-	1	2	3	4	5
Total	9	-	-	-	1	1	1	3	4	13	10
Ohio	4	-	-	-	1	-	-	1	1	4	7
Indiana	4	-	-	-	-	1	1	2	1	-	-
Illinois	1	-	-	-	-	-	-	-	1	1	1
Michigan	-	-	-	-	-	-	-	-	-	7	2
Wisconsin	-	-	-	-	-	-	-	-	1	1	-
WEST NORTH CENTRAL											
Paralytic	1	-	-	-	-	1	-	1	1	2	9
Total	5	-	-	-	-	1	-	1	1	5	21
Minnesota	-	-	-	-	-	-	-	-	-	4	-
Iowa	3	-	-	-	-	1	-	1	-	1	-
Missouri	2	-	-	-	-	-	-	-	-	-	16
North Dakota	-	-	-	-	-	-	-	-	-	-	1
South Dakota	-	-	-	-	-	-	-	-	-	-	1
Nebraska	-	-	-	-	-	-	-	-	1	-	2
Kansas	-	-	-	-	-	-	-	-	-	-	1

Table 1 (Continued)

State and Region	Cumulative 1962	Cases Reported to CDC For Week Ending 2/24	3/3	3/10	3/17	3/24	3/31	Six Week Total	Comparable Six Weeks Totals in: 1961	1960	1959
SOUTH ATLANTIC											
Paralytic	5	-	-	1	-	-	-	1	2	10	26
Total	5	-	-	1	-	-	-	1	5	11	33
Delaware	-	-	-	-	-	-	-	-	1	-	2
Maryland	-	-	-	-	-	-	-	-	-	1	-
D.C.	-	-	-	-	-	-	-	-	-	-	-
Virginia	1	-	-	-	-	-	-	-	-	-	-
West Virginia	-	-	-	-	-	-	-	-	2	1	6
North Carolina	1	-	-	-	-	-	-	-	1	1	3
South Carolina	1	-	-	-	-	-	-	-	-	1	4
Georgia	1	-	-	1	-	-	-	1	1	1	1
Florida	1	-	-	-	-	-	-	-	-	6	17
EAST SOUTH CENTRAL											
Paralytic	2	-	-	-	-	-	-	-	2	4	7
Total	3	-	-	-	-	-	-	-	4	4	11
Kentucky	-	-	-	-	-	-	-	-	4	3	2
Tennessee	1	-	-	-	-	-	-	-	-	-	4
Alabama	-	-	-	-	-	-	-	-	-	1	-
Mississippi	2	-	-	-	-	-	-	-	-	-	5
WEST SOUTH CENTRAL											
Paralytic	11	1	-	-	1	-	2	4	1	2	26
Total	13	1	1	-	1	-	2	5	5	3	31
Arkansas	-	-	-	-	-	-	-	-	-	-	5
Louisiana	4	1	-	-	1	-	-	2	-	2	9
Oklahoma	-	-	-	-	-	-	-	-	-	-	-
Texas	9	-	1	-	-	-	2	3	5	1	17
MOUNTAIN											
Paralytic	3	-	2	-	-	-	-	2	2	3	3
Total	5	-	2	-	-	-	-	2	3	3	5
Montana	2	-	-	-	-	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	-	-	1	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	1
Colorado	-	-	-	-	-	-	-	-	-	-	1
New Mexico	-	-	-	-	-	-	-	-	1	-	1
Arizona	2	-	2	-	-	-	-	2	-	2	2
Utah	1	-	-	-	-	-	-	-	1	1	-
Nevada	-	-	-	-	-	-	-	-	-	-	-
PACIFIC											
Paralytic	5	-	-	2	-	1	-	3	8	24	24
Total	7	-	-	2	-	1	-	3	9	28	29
Washington	-	-	-	-	-	-	-	-	-	3	3
Oregon	-	-	-	-	-	-	-	-	-	4	1
California	6	-	-	1	-	1	-	2	9	21	25
Alaska	-	-	-	-	-	-	-	-	-	-	-
Hawaii	1	-	-	1	-	-	-	1	-	-	-
TERRITOTY											
Puerto Rico	2	-	-	1	-	-	1	2	1	16	1

Table II

THE NATIONAL FOUNDATION

MONTHLY REPORT OF POLIOMYELITIS VACCINE RELEASED AND SHIPPED*
(1,000 cc's)

February 1962

	SINGLE ANTIGEN		MULTIPLE ANTIGEN		TOTAL	
	This Month	To Date	This Month	To Date	This Month	To Date
CC. Released	4,775	518,212	0	15,586	4,775	533,798
CC. Shipped						
National Foundation	1	14,262	0	0	1	14,262
Public Agencies	2,267	186,974	0	1,416	2,267	188,390
Commercial Channels	1,689	188,902	0	13,387	1,689	202,289
Domestic Total	3,957	390,138	0	14,803	3,957	404,491
Export	560	111,336	0	634	560	111,970

CC. UNSHIPPED END OF MONTH**
(1,000 cc's)

	1960	1961	1962
January	19,459	14,755	4,963
February	20,965	15,737	5,220
March	27,062	13,414	
April	27,216	10,887	
May	24,846	6,448	
June	24,620	6,558	
July	23,830	4,233	
August	24,525	4,599	
September	23,091	6,181	
October	19,565	5,543	
November	16,319	5,139	
December	15,669	4,038	

* Includes manufacturers' adjustments of previously reported figures.
** Excludes outdated vaccine removed from inventory.